



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,410	01/21/2004	Jun-Ren Shih	SHIH3036/Em	1208

23364 7590 02/07/2007
BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314

EXAMINER

SHENG, TOM V

ART UNIT	PAPER NUMBER
----------	--------------

2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
2 MONTHS	02/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/760,410

Applicant(s)

SHIH ET AL.

Examiner

Tom V. Sheng

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Art Unit: 2629

1. This application is in condition for allowance except for the following formal matters:

In claim 6, line 3, "the first control signal" should be "a first control signal" instead.

In claim 6, lines 10-11, "the second control signal" should be "a second control signal" instead.

In fig. 2, the symbols "op" and "on" of switch unit 264 are reversed and needs to be corrected. See the description regarding the connections of corresponding TFTs of the fourth switch unit 264 in page 8, lines 6-9.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Allowable Subject Matter

2. Claims 1-8 are allowed.

3. The following is a statement of reasons for the indication of allowable subject matter:

None of the prior arts of record teaches the limitations

"a first switch unit, to receive a first clock signal and a second clock signal, and to perform switching using the first control signal;

a second switch unit, coupled between the first switch unit at both a first connection node and a second connection node and an operating voltage, to receive

Art Unit: 2629

the first clock signal and the second clock signal through switching the first switch unit, thereby raising voltages at the first connection node and the second connection node to the operating voltage;

a third switch unit, coupled between the first and second connection nodes and the operation voltage, to receive the first control signal and the second control signal, and to receive the first clock signal or the second clock signal through the first switch unit on and off, thereby providing a stable processing;

a fourth switch unit, coupled between the first and second connection nodes and the operating voltage, to perform switching of the fourth switch unit according to voltage levels of the first connection node and the second connection node; and

a fifth switch unit, connected to the fourth switch unit, to generate a scan signal to output according to the switching of the fourth switch unit" of claims 1, 4 and similarly of claim 6.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kubota et al. (US 6,580,411 B1) teach a latch circuit that operates as a level shifter in accordance with first and second control signals and a clock signal. The level-shifted output is used to drive scanning lines of a display panel.

Washio et al. (US 6,909,417) teach a level shifter provided for each of SR flip-flops constituting a shift register, outputs of which drive scanning lines of a display

Art Unit: 2629

panel. Each level shifter is operated to increase the level of a clock signal during a pulse output of a previous level shifter, and the operation is suspended at the end of the pulse output.

Kim et al. (US 7,050,036 B2) and Park et al. (US 2004/0109526 A1) teach a shift register with built-in level shifter. Each shift register consists of a pulse shifting stage followed by a level shifting stage. Timing is controlled by 3 of 4 clock phases. The shifting stages are connected in cascade and outputs from the level shifting stages are used to drive gate lines of a display panel.

Yu (US 2004/0008193 A1) teaches a sequential pulse train generator. Each stage of the generator includes a dynamic shift register, level shifter and buffer. Each stage is controlled by two clock signals and two control signals and has one buffered output.

Osame (US 7,002,545 B2) teaches a shift register with many stages for shifting a start pulse controlled by a clock signal and an inverse clock signal. The output of each stage is higher in amplitude than the original start pulse.

Azami et al. (US 7,057,598 B2) teach a pulse output circuit consisting of a shift register and a level shifter.

Tseng (US 2004/0032291 A1) teaches a TFT level shifter. The level shifter inputs two complementary clock signals, pre-shift them and then level shift them to a higher output.

Art Unit: 2629

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Sheng

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

